INTEGRATED
Environmental Services, Inc.

Parcel B
Supplemental Site Investigation Addendum

Boeing Realty Corporation
C-6 Facility

Los Angeles
California

April 1999

Prepared by
Integrated Environmental Services, Inc.

For
Boeing Realty Corporation

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ADDENDUM
PARCEL B SUPPLEMENTAL SITE INVESTIGATION – BUILDING 4

This report is an addendum to the Parcel B Supplemental Site Investigation (SSI) report prepared in July 1998 by Integrated Environmental Services, Inc. for the Boeing C-6 facility in Los Angeles, California (IESI 1998). This addendum presents the investigation activities and findings pertaining to Building 4, in Area of Interest (AOI) 4, as defined in the SSI report. As discussed in that report, Building 4 was in use as the main power source for the C-6 facility and could not be investigated when the Parcel B SSI was conducted in May 1998. The sampling at Building 4 was conducted in March 1999 immediately after its demolition that month.

The Building 4 investigation followed the objectives, approach, and methods instituted for the main SSI. For program details, please refer to the SSI report (IESI 1998).

DESCRIPTION

Building 4 was a 3,000-square-foot structure constructed by Douglas Aircraft Company (DAC) in the 1950s to house electrical equipment. A room in the eastern portion of the building was used for battery storage and charging operations (K/J 1996c). The room contained sixty 2-volt batteries, which were removed as the building was dismantled. Building 4 was the last structure removed from Parcel B since site power had to be rerouted before demolition.

According to plant layout maps from 1943 to 1948 and aerial photographs, three 8,000-gallon aboveground transformer oil storage tanks were located in the western portion of the Building 4 footprint and spill-containment berm, measuring approximately 50 by 50 feet enclosed the tank area. The tanks were removed sometime in 1952 or 1953, during construction of the southern parking lot.

A complete description of Building 4 is presented in the SSI report.

INVESTIGATION PROGRAM

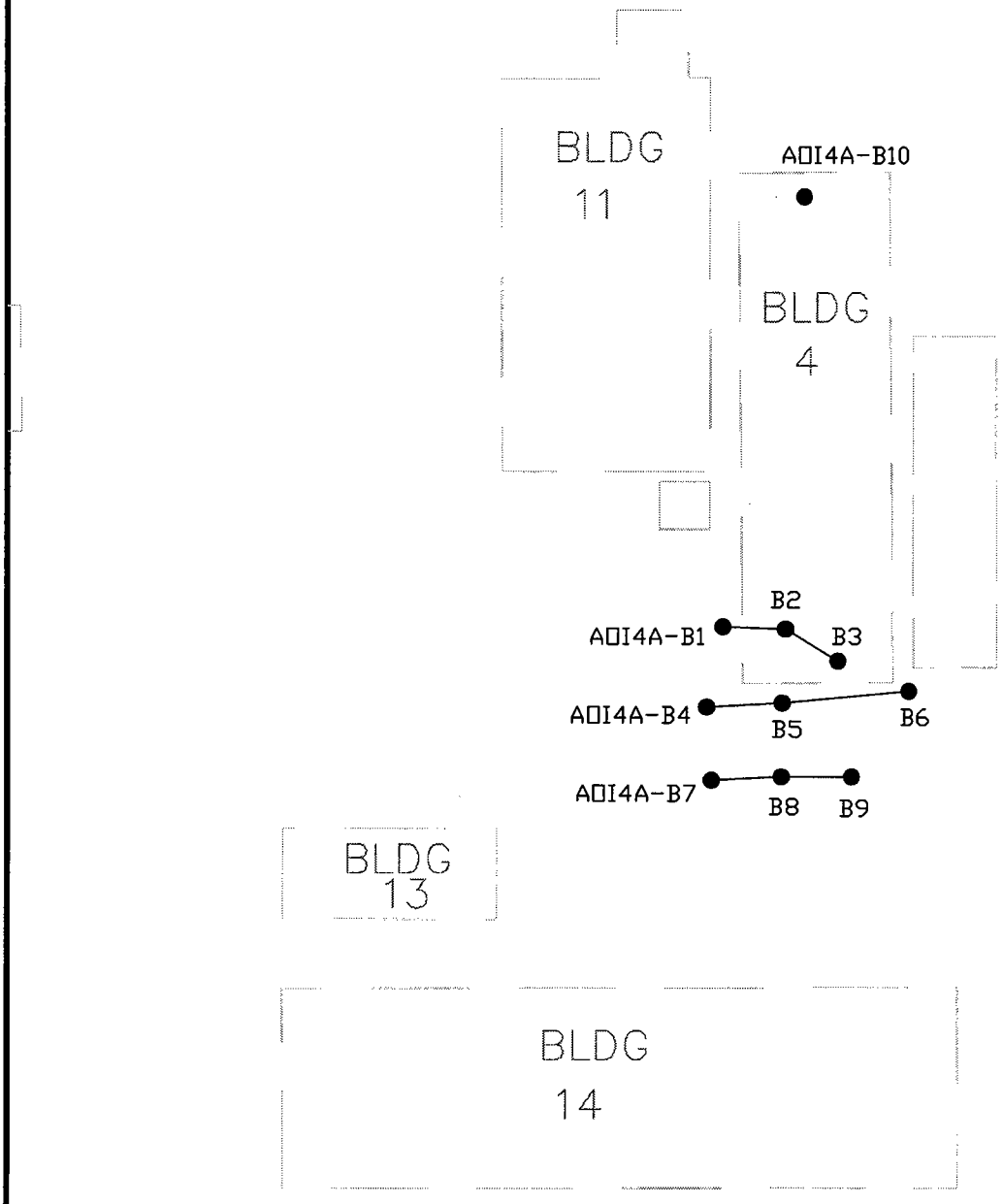
During the investigation, ten borings to depths between 5 and 15 feet below ground surface (bgs) were advanced: one on the east side of Building 4, a former battery storage area, and nine on the west side of the building, a former aboveground storage tank area (containing transformer oil).

The single boring on the east side of the building was advanced to 15 feet bgs with soil samples collected at 1, 5, 10, and 15 feet bgs. The samples were submitted to the laboratory for metals and pH analysis to assess potential impacts to soil from the battery storage activities.

Each of the nine borings on the west side of the building were advanced to 5 feet bgs, with soil samples collected at 1 and 5 feet below the native soil surface. Due to the presence of a 1- to 3-foot layer of fill soil placed over this area after the removal of the tanks, the first soil sample at each boring was collected 1 foot below where the native soil is encountered.

In addition to the individual (discrete) samples collected at each specified depth in the nine borings, composite soil samples were prepared by combining soil from the three locations shown in Figure 1. Samples were collected at 1 and 5 feet bgs, for a total of six composite samples. The soil samples from this area were analyzed for PCBs to assess potential impacts to soil from the former transformer oil tanks. The composite samples and three discrete samples (one from each row of samples, two from 1 foot bgs, and one from 5 feet bgs) were submitted to the laboratory for analysis. The remaining discrete samples were submitted to the laboratory but placed on hold until the results of the composite samples were evaluated. Since no PCBs were detected in any of the composite samples, none of the associated discrete samples were analyzed.

Table A-1 summarizes the soil sampling program for Building 4.



Legend

- AOI4A Sample Location
- Composite Samples
- Demolished Building

N

0 30 60

FEET

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(949) 852-9050

TITLE:
Building 4 Sample Locations
AOI4A
Boeing C-6 Facility
Los Angeles, CA

DWN:	DES.:	PROJECT NO.:
JDL	JDL	BOC6\SSI
CHKD:	APPD:	FIGURE NO.:
AC	JPO	A-1
DATE:	REV.:	
4/15/99	3	

F:\Projects\Boeing C6\Par B SuppSiteInv\SSI Rpt\B4samps.dwg

TABLE A-1
SOIL SAMPLING PROGRAM FOR BUILDING 4 (AOI4)

Building 4 Location	No. of Borings	No. of Composite Sample Locations & Depths[a]	No. of Composite Samples Analyzed	No. of Discrete Sample Locations & Depths	No. of Discrete Samples Analyzed	Chemical Analyses
Northeast Section – Battery Room	1	NA	NA	1 at 1, 5, 10, & 15 ft	4	Metals and pH
West Side – Former Transformer Tank Area	9	3 at 1 & 5 ft[b]	6	9 at 1 & 5 ft[b]	3	PCBs

NA = Not applicable
PCBs = Polychlorinated biphenyls

Notes:

a) Six composite samples were collected by combining soil collected at each depth from each row (north-south) of borings (see Figure 1). For example, composite sample AOI4A-C1 consists of soil collected at 1 foot below native soil surface from borings B1, B2, and B3.

b) Soil samples were collected at 1 and 5 feet below the contract between native and fill soils.

SOIL SAMPLING

Field activities began with the selection of sampling locations for surface soils and a geophysical survey at locations of subsurface investigation. Sampling locations in the west side of the building were originally determined by a square grid pattern. However, the presence of underground debris and pipes necessitated the relocation of two of the samples. The final soil sampling locations are shown in Figure A-1.

Subsurface soils were sampled using direct-push drilling methods. The push technology uses a truck-mounted, hydraulically driven sampler that allows penetration and standard sampling while minimizing generation of drill cuttings. The sampler for the push tool was fitted with 2-foot-long, 1-inch-diameter Tenite sleeves if a contact depth between native and fill material had to be determined. When collecting samples, the push tool was fitted with four 6-inch stainless steel rings. Minimal cuttings were generated using this equipment. The boreholes were backfilled with a cement-bentonite grout. To minimize cross-contamination, the sampling equipment was decontaminated prior to each sample collection. As stated, ten borings were advanced in the Building 4 area.

Sample handling procedures followed the approved SSI regime. Borehole soil samples were collected in stainless-steel liners with Teflon sheets and capped at each end. Each sample container was labeled and temporarily stored in an ice-filled cooler. The field supervisor maintained custody until the samples were transferred to the laboratory. Custody was documented on standard chain-of-custody forms, which are included with the laboratory reports at the end of this addendum.

SAMPLE ANALYTICAL PROGRAM

As during the SSI, analytical work was conducted by Orange Coast Analytical, Inc. in Tustin, California. The laboratory is California-certified in the use of standard U.S. Environmental Protection Agency test methods and appropriate state-required modifications. As described in the SSI report, analytical methods were selected for constituents of potential concern based on historical uses of the property. The analytical methods selected and the number of samples analyzed are detailed in Table A-2.

TABLE A-2
ANALYTICAL METHODS AND NUMBER OF SAMPLES ANALYZED

Building 4 Location	No. of Samples Analyzed	PCBs (8080)	pH (9045)	Metals (6010, 7196, 7471)
East side – Battery room	4	0	4	4
West side – Transformer oil tanks	9	9	0	0

PCBs = Polychlorinated biphenyls

SITE INVESTIGATION FINDINGS

As discussed in the SSI report, the analytical results were compared to a set of health-based remediation goals (HBRGs) developed for the site as part of a self-imposed program to identify AOIs. The HBRGs have been used for screening purposes during demolition to enhance the effectiveness of field activities.

Four samples were collected from the one boring advanced in the on the east side of the building, in the previous location of a battery room. These samples were submitted for metals and pH analysis. The laboratory results are included at the end of this addendum. The maximum concentration of each detected constituent is presented in the Table A-3.

TABLE A-3
SUMMARY OF CONSTITUENTS DETECTED IN SOIL, BATTERY ROOM

Constituent	Maximum Detection (mg/kg)	HBRG (mg/kg)
arsenic	6.3	14
barium	180	2520
beryllium	0.71	15.6
cadmium	0.21	16.4
chromium-total	25	97.3
cobalt	12	20
copper	42	1260
lead	6.5	111
nickel	22	239
vanadium	55	84
zinc	83	8730

HBRG = Health-based remediation goal

None of the detections exceeded the HBRGs established for the site. The pH analysis resulted in a pH range of 8.2 to 8.9.

In the west side of the building, borings were push sampled using clear 2-foot Tenite sleeves to identify the contact between fill material and native soil. Native soils were encountered from 4.o to 7.5 feet bgs. Once the contact depth was determined, soil samples were collected using the stainless steel sleeves. All samples were analyzed for PCBs. The results of the analysis indicate that none of the samples contained PCBs above the detection limits. The laboratory results are presented at the end of this addendum.

QUALITY ASSURANCE/QUALITY CONTROL RESULTS

One equipment rinsate and one duplicate soil sample were collected as part of the quality assurance and quality control (QA/QC) sampling protocol described in the SSI report. The rinsate sample was collected by pouring distilled water over and through the sample collection equipment after the equipment's final decontamination rinse. The sample was analyzed for PCBs, metals, and pH. No PCBs were detected in the rinsate sample, and metals and were within background range. The results of the rinsate analysis are presented at the end of this addendum.

The field duplicate sample was collected at boring AOI4A-B10 from the sample sleeve directly below the original sample collected at 15 feet bgs. The field duplicate and its associated routine (original) sample were collected using the same sampling method. The analytical results of the duplicate sample and its associated routine sample indicate good correlation. The results are presented in the laboratory reports at the end of this addendum.

CONCLUSIONS

The Building 4 investigation was conducted following the objectives, approach, and methods established for the main SSI as described in the SSI report (IESI 1998) The data generated during this investigation will support future site remediation, feasibility studies, groundwater investigations, and risk assessment, should such actions become necessary.

None of the Building 4 soils were found to contain constituents of potential concern at levels that warrant remediation. Furthermore, the pH range of 8.2 to 8.9 in the former battery room location indicates no battery acid contamination has occurred.

LABORATORY REPORTS

ORANGE COAST ANALYTICAL, INC.
3002 Dow, Suite 532, Tustin, CA 92780 (714) 832-0064 Fax (714) 832-0067
4620 E. Elwood, Suite 4, Phoenix, AZ 85040 (602) 736-0960 Fax (602) 736-0970

LABORATORY REPORT FORM

Laboratory Name: ORANGE COAST ANALYTICAL, INC.

Address: 3002 Dow Suite 532 Tustin, CA 92780

Telephone: (714) 832-0064

Laboratory Certification
(ELAP) No.: 1416 Expiration Date: 2001

Laboratory Director's Name (Print) : Mark Noorani

Client: Integrated Environmental

Project No.:

Project Name: Bldg 4, AOI4, BRC

Laboratory Reference: IES 10821

Analytical Method: Metals, pH, PCB's

Date Sampled: 03/31/99
Date Received: 03/31/99
Date Reported: 04/01/99

Sample Matrix: Soil & Water

Chain of Custody Received: Yes

Laboratory Director's Signature: Mark Noorani

Integrated Environmental Services
Ms. Joann Ornelas
3990 Westerly Pl. Suite 210
Newport Beach, CA 92660

Client Project ID: Bldg 4, AOI4, BRC
Client Project #:

Sample Description: Soil, AOI4A-B2-1-5.5
Laboratory Sample #: 99030257
Laboratory Reference #: IES 10821

Sampled: 03/31/99
Received: 03/31/99
Analyzed: 04/01/99
Reported: 04/01/99

POLYCHLORINATED BIPHENYL'S (EPA 8080)

ANALYTE	*CAS NUMBER*	*DETECTION LIMIT µg/kg*	*SAMPLE RESULTS µg/kg*
PCB-1016	12674-11-2	20	N.D.
PCB-1221	111104-28-2	20	N.D.
PCB-1232	11141-16-5	20	N.D.
PCB-1242	53469-21-9	20	N.D.
PCB-1248	12672-29-6	20	N.D.
PCB-1254	11097-69-1	20	N.D.
PCB-1260	11096-82-5	20	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

Orange Coast Analytical, Inc.

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Newport Beach, CA 92660

Client Project ID: Bldg 4, AOI4, BRC
Client Project #:

Sample Description: Soil, AOI4A-B5-2-9.5
Laboratory Sample #: 99030258
Laboratory Reference #: IES 10821

Sampled: 03/31/99
Received: 03/31/99
Analyzed: 04/01/99
Reported: 04/01/99

POLYCHLORINATED BIPHENYL'S (EPA 8080)

ANALYTE	*CAS NUMBER*	*DETECTION LIMIT µg/kg*	*SAMPLE RESULTS µg/kg*
PCB-1016	12674-11-2	20	N.D.
PCB-1221	111104-28-2	20	N.D.
PCB-1232	11141-16-5	20	N.D.
PCB-1242	53469-21-9	20	N.D.
PCB-1248	12672-29-6	20	N.D.
PCB-1254	11097-69-1	20	N.D.
PCB-1260	11096-82-5	20	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Client Project ID: Bldg 4, AOI4, BRC
Client Project #:

Sample Description: Soil, AOI4A-B8-1-5.5
Laboratory Sample #: 99030259
Laboratory Reference #: IES 10821

Sampled: 03/31/99
Received: 03/31/99
Analyzed: 04/01/99
Reported: 04/01/99

POLYCHLORINATED BIPHENYL'S (EPA 8080)

ANALYTE	*CAS NUMBER*	*DETECTION LIMIT µg/kg*	*SAMPLE RESULTS µg/kg*
PCB-1016	12674-11-2	20	N.D.
PCB-1221	111104-28-2	20	N.D.
PCB-1232	11141-16-5	20	N.D.
PCB-1242	53469-21-9	20	N.D.
PCB-1248	12672-29-6	20	N.D.
PCB-1254	11097-69-1	20	N.D.
PCB-1260	11096-82-5	20	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

Orange Coast Analytical, Inc.

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Newport Beach, CA 92660

Client Project ID: Bldg 4, AOI4, BRC
Client Project #:

Sample Description: Water, AOI4A-Rinsate-1
Laboratory Sample #: 99030260
Laboratory Reference #: IES 10821

Sampled: 03/31/99
Received: 03/31/99
Analyzed: 04/01/99
Reported: 04/01/99

POLYCHLORINATED BIPHENYL'S (EPA 8080)

ANALYTE	*CAS NUMBER*	*DETECTION LIMIT µg/l*	*SAMPLE RESULTS µg/l*
PCB-1016	12674-11-2	5.0	N.D.
PCB-1221	111104-28-2	5.0	N.D.
PCB-1232	11141-16-5	5.0	N.D.
PCB-1242	53469-21-9	5.0	N.D.
PCB-1248	12672-29-6	5.0	N.D.
PCB-1254	11097-69-1	5.0	N.D.
PCB-1260	11096-82-5	5.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Client Project ID: Bldg 4, AOI4, BRC
Client Project #:

Sample Description: Soil, AOI4A-C1/B1,2,3-1-1
Laboratory Sample #: 99030261
Laboratory Reference #: IES 10821

Sampled: 03/31/99
Received: 03/31/99
Analyzed: 04/01/99
Reported: 04/01/99

POLYCHLORINATED BIPHENYL'S (EPA 8080)

ANALYTE	*CAS NUMBER*	*DETECTION LIMIT µg/kg*	*SAMPLE RESULTS µg/kg*
PCB-1016	12674-11-2	20	N.D.
PCB-1221	111104-28-2	20	N.D.
PCB-1232	11141-16-5	20	N.D.
PCB-1242	53469-21-9	20	N.D.
PCB-1248	12672-29-6	20	N.D.
PCB-1254	11097-69-1	20	N.D.
PCB-1260	11096-82-5	20	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Client Project ID: Bldg 4, AOI4, BRC
Client Project #:

Sample Description: Soil, AOI4A-C2/B1,2,3-2-5
Laboratory Sample #: 99030262
Laboratory Reference #: IES 10821

Sampled: 03/31/99
Received: 03/31/99
Analyzed: 04/01/99
Reported: 04/01/99

POLYCHLORINATED BIPHENYL'S (EPA 8080)

ANALYTE	*CAS NUMBER*	*DETECTION LIMIT µg/kg*	*SAMPLE RESULTS µg/kg*
PCB-1016	12674-11-2	20	N.D.
PCB-1221	111104-28-2	20	N.D.
PCB-1232	11141-16-5	20	N.D.
PCB-1242	53469-21-9	20	N.D.
PCB-1248	12672-29-6	20	N.D.
PCB-1254	11097-69-1	20	N.D.
PCB-1260	11096-82-5	20	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Client Project ID: Bldg 4, AOI4, BRC
Client Project #:

Sample Description: Soil, AOI4A-C3/B4,5,6-1-1
Laboratory Sample #: 99030263
Laboratory Reference #: IES 10821

Sampled: 03/31/99
Received: 03/31/99
Analyzed: 04/01/99
Reported: 04/01/99

POLYCHLORINATED BIPHENYL'S (EPA 8080)

ANALYTE	*CAS NUMBER*	*DETECTION LIMIT µg/kg*	*SAMPLE RESULTS µg/kg*
PCB-1016	12674-11-2	20	N.D.
PCB-1221	111104-28-2	20	N.D.
PCB-1232	11141-16-5	20	N.D.
PCB-1242	53469-21-9	20	N.D.
PCB-1248	12672-29-6	20	N.D.
PCB-1254	11097-69-1	20	N.D.
PCB-1260	11096-82-5	20	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Client Project ID: Bldg 4, AOI4, BRC
Client Project #:

Sampled: 03/31/99
Received: 03/31/99
Analyzed: 04/01/99
Reported: 04/01/99

Sample Description: Soil, AOI4A-C4/B4,5,6-2-5
Laboratory Sample #: 99030264
Laboratory Reference #: IES 10821

POLYCHLORINATED BIPHENYL'S (EPA 8080)

ANALYTE	*CAS NUMBER*	*DETECTION LIMIT µg/kg*	*SAMPLE RESULTS µg/kg*
PCB-1016	12674-11-2	20	N.D.
PCB-1221	111104-28-2	20	N.D.
PCB-1232	11141-16-5	20	N.D.
PCB-1242	53469-21-9	20	N.D.
PCB-1248	12672-29-6	20	N.D.
PCB-1254	11097-69-1	20	N.D.
PCB-1260	11096-82-5	20	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Client Project ID: Bldg 4, AOI4, BRC
Client Project #:

Sampled: 03/31/99
Received: 03/31/99
Analyzed: 04/01/99
Reported: 04/01/99

Sample Description: Soil, AOI4A-C5/B7,8,9-1-1
Laboratory Sample #: 99030265
Laboratory Reference #: IES 10821

POLYCHLORINATED BIPHENYL'S (EPA 8080)

ANALYTE	*CAS NUMBER*	*DETECTION LIMIT µg/kg*	*SAMPLE RESULTS µg/kg*
PCB-1016	12674-11-2	20	N.D.
PCB-1221	111104-28-2	20	N.D.
PCB-1232	11141-16-5	20	N.D.
PCB-1242	53469-21-9	20	N.D.
PCB-1248	12672-29-6	20	N.D.
PCB-1254	11097-69-1	20	N.D.
PCB-1260	11096-82-5	20	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Client Project ID: Bldg 4, AOI4, BRC
Client Project #:

Sample Description: Soil, AOI4A-C6/B7,8,9-2-5
Laboratory Sample #: 99030266
Laboratory Reference #: IES 10821

Sampled: 03/31/99
Received: 03/31/99
Analyzed: 04/01/99
Reported: 04/01/99

POLYCHLORINATED BIPHENYL'S (EPA 8080)

ANALYTE	*CAS NUMBER*	*DETECTION LIMIT µg/kg*	*SAMPLE RESULTS µg/kg*
PCB-1016	12674-11-2	20	N.D.
PCB-1221	111104-28-2	20	N.D.
PCB-1232	11141-16-5	20	N.D.
PCB-1242	53469-21-9	20	N.D.
PCB-1248	12672-29-6	20	N.D.
PCB-1254	11097-69-1	20	N.D.
PCB-1260	11096-82-5	20	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Client Project ID: Bldg 4, AOI4, BRC
Client Project #:

Sample Description: Soil, AOI4A-B10-1-0.5
Laboratory Sample #: 99030252
Laboratory Reference #: IES 10821

Sampled: 03/31/99
Received: 03/31/99
Analyzed: 04/01/99
Reported: 04/01/99

CCR - METALS

ANALYTE	*EPA METHOD*	*DETECTION LIMIT mg/kg*	*SAMPLE RESULTS mg/kg*
Antimony	6010	5.0	N.D.
Arsenic	6010	1.0	3.8
Barium	6010	0.5	180
Beryllium	6010	0.5	0.69
Cadmium	6010	0.5	0.21
Chromium (Total)	6010	0.5	22
Chromium (VI)	7196	0.5	N.D.
Cobalt	6010	0.5	9.5
Copper	6010	0.5	23
Lead	6010	1.0	5.7
Mercury	7471	0.1	N.D.
Molybdenum	6010	1.0	N.D.
Nickel	6010	0.5	22
Selenium	6010	5.0	N.D.
Silver	6010	0.5	N.D.
Thallium	6010	5.0	N.D.
Vanadium	6010	0.5	43
Zinc	6010	0.5	49

Analytes reported as N.D. were not present above the stated limit of detection.

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Client Project ID: Bldg 4, AOI4, BRC
Client Project #:

Sample Description: Soil, AOI4A-B10-2-5
Laboratory Sample #: 99030253
Laboratory Reference #: IES 10821

Sampled: 03/31/99
Received: 03/31/99
Analyzed: 04/01/99
Reported: 04/01/99

CCR - METALS

ANALYTE	*EPA METHOD*	*DETECTION LIMIT mg/kg*	*SAMPLE RESULTS mg/kg*
Antimony	6010	5.0	N.D.
Arsenic	6010	1.0	5.4
Barium	6010	0.5	160
Beryllium	6010	0.5	0.61
Cadmium	6010	0.5	N.D.
Chromium (Total)	6010	0.5	24
Chromium (VI)	7196	0.5	N.D.
Cobalt	6010	0.5	11
Copper	6010	0.5	32
Lead	6010	1.0	5.9
Mercury	7471	0.1	N.D.
Molybdenum	6010	1.0	N.D.
Nickel	6010	0.5	21
Selenium	6010	5.0	N.D.
Silver	6010	0.5	N.D.
Thallium	6010	5.0	N.D.
Vanadium	6010	0.5	51
Zinc	6010	0.5	63

Analytes reported as N.D. were not present above the stated limit of detection.

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Client Project ID: Bldg 4, AOI4, BRC
Client Project #:

Sample Description: Soil, AOI4A-B10-3-10
Laboratory Sample #: 99030254
Laboratory Reference #: IES 10821

Sampled: 03/31/99
Received: 03/31/99
Analyzed: 04/01/99
Reported: 04/01/99

CCR - METALS

ANALYTE	*EPA METHOD*	*DETECTION LIMIT mg/kg*	*SAMPLE RESULTS mg/kg*
Antimony	6010	5.0	N.D.
Arsenic	6010	1.0	6.3
Barium	6010	0.5	180
Beryllium	6010	0.5	0.68
Cadmium	6010	0.5	N.D.
Chromium (Total)	6010	0.5	25
Chromium (VI)	7196	0.5	N.D.
Cobalt	6010	0.5	12
Copper	6010	0.5	36
Lead	6010	1.0	6.5
Mercury	7471	0.1	N.D.
Molybdenum	6010	1.0	N.D.
Nickel	6010	0.5	21
Selenium	6010	5.0	N.D.
Silver	6010	0.5	N.D.
Thallium	6010	5.0	N.D.
Vanadium	6010	0.5	54
Zinc	6010	0.5	71

Analytes reported as N.D. were not present above the stated limit of detection.

Orange Coast Analytical, Inc.

Integrated Environmental Services
Ms. Joann Ornelas
3990 Westerly Pl. Suite 210
Newport Beach, CA 92660

Client Project ID: Bldg 4, AOI4, BRC
Client Project #:

Sample Description: Soil, AOI4A-B10-4-15D
Laboratory Sample #: 99030255
Laboratory Reference #: IES 10821

Sampled: 03/31/99
Received: 03/31/99
Analyzed: 04/01/99
Reported: 04/01/99

CCR - METALS

ANALYTE	*EPA METHOD*	*DETECTION LIMIT mg/kg*	*SAMPLE RESULTS mg/kg*
Antimony	6010	5.0	N.D.
Arsenic	6010	1.0	4.1
Barium	6010	0.5	170
Beryllium	6010	0.5	0.67
Cadmium	6010	0.5	N.D.
Chromium (Total)	6010	0.5	23
Chromium (VI)	7196	0.5	N.D.
Cobalt	6010	0.5	12
Copper	6010	0.5	32
Lead	6010	1.0	6.2
Mercury	7471	0.1	N.D.
Molybdenum	6010	1.0	N.D.
Nickel	6010	0.5	19
Selenium	6010	5.0	N.D.
Silver	6010	0.5	N.D.
Thallium	6010	5.0	N.D.
Vanadium	6010	0.5	55
Zinc	6010	0.5	72

Analytes reported as N.D. were not present above the stated limit of detection.

Orange Coast Analytical, Inc.

Integrated Environmental Services
Ms. Joann Ornelas
3990 Westerly Pl. Suite 210
Newport Beach, CA 92660

Client Project ID: Bldg 4, AOI4, BRC
Client Project #:

Sample Description: Soil, AOI4A-B10-4-15
Laboratory Sample #: 99030256
Laboratory Reference #: IES 10821

Sampled: 03/31/99
Received: 03/31/99
Analyzed: 04/01/99
Reported: 04/01/99

CCR - METALS

ANALYTE	*EPA METHOD*	*DETECTION LIMIT mg/kg*	*SAMPLE RESULTS mg/kg*
Antimony	6010	5.0	N.D.
Arsenic	6010	1.0	4.1
Barium	6010	0.5	160
Beryllium	6010	0.5	0.71
Cadmium	6010	0.5	N.D.
Chromium (Total)	6010	0.5	25
Chromium (VI)	7196	0.5	N.D.
Cobalt	6010	0.5	11
Copper	6010	0.5	42
Lead	6010	1.0	6.4
Mercury	7471	0.1	N.D.
Molybdenum	6010	1.0	N.D.
Nickel	6010	0.5	19
Selenium	6010	5.0	N.D.
Silver	6010	0.5	N.D.
Thallium	6010	5.0	N.D.
Vanadium	6010	0.5	54
Zinc	6010	0.5	78

Analytes reported as N.D. were not present above the stated limit of detection.

Orange Coast Analytical, Inc.

Integrated Environmental Services
Ms. Joann Ornelas
3990 Westerly Pl. Suite 210
Newport Beach, CA 92660

Client Project ID: Bldg 4, AOI4, BRC
Client Project #:

Sample Description: Water, AOI4A-Rinsate-1
Laboratory Sample #: 99030260
Laboratory Reference #: IES 10821

Sampled: 03/31/99
Received: 03/31/99
Analyzed: 03/31-04/01/99
Reported: 04/01/99

CCR - METALS

ANALYTE	*EPA METHOD*	*DETECTION LIMIT mg/l*	*SAMPLE RESULTS mg/l*
Antimony	6010	0.1	N.D.
Arsenic	6010	0.1	N.D.
Barium	6010	0.01	N.D.
Beryllium	6010	0.01	N.D.
Cadmium	6010	0.01	N.D.
Chromium (Total)	6010	0.01	N.D.
Chromium (VI)	7196	0.01	N.D.
Cobalt	6010	0.01	N.D.
Copper	6010	0.01	N.D.
Lead	6010	0.05	N.D.
Mercury	7471	0.002	N.D.
Molybdenum	6010	0.05	N.D.
Nickel	6010	0.01	N.D.
Selenium	6010	0.1	N.D.
Silver	6010	0.01	N.D.
Thallium	6010	0.1	N.D.
Vanadium	6010	0.01	N.D.
Zinc	6010	0.01	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

Orange Coast Analytical, Inc.

Integrated Environmental Services
Ms. Joann Ornelas
3990 Westerly Pl. Suite 210
Newport Beach, CA 92660

Client Project ID: Bldg 4, AOI4, BRC
Client Project #:

Sample Description: Soil, Water

Laboratory Reference #: IES 10821

Sampled: 03/31/99
Received: 03/31/99
Analyzed: 03/31/99
Reported: 04/01/99

pH (EPA 9045)

LABORATORY SAMPLE NUMBER	*CLIENT SAMPLE NUMBER*	*SAMPLE RESULTS*
99030252	AOI4A-B10-1-0.5	8.2
99030253	AOI4A-B10-2-5	8.9
99030254	AOI4A-B10-3-10	8.9
99030255	AOI4A-B10-4-15D	8.7
99030256	AOI4A-B10-4-15	8.8
99030260	AOI4-Rinsate-1	8.4

Orange Coast Analytical, Inc.

QC DATA REPORT

Analysis : PCB 'S (EPA 8080)

Date of Analysis :04/1/99
Laboratory Sample No :99030257
Laboratory Reference No : IES 10821

Analyte	R1 (ppb)	SP (ppb)	MS (ppb)	MSD (ppb)	PR1 %	PR2 %	RPD %
PCB-1260	0.0	250	160	150	64	60	6

Definition of Terms :

R1	Results Of First Analysis
SP	Spike Concentration Added to Sample
MS	Matrix Spike Results
MSD	Matrix Spike Duplicate Results
PR1	Percent Recovery Of MS: {(MS-R1) / SP} x100
PR2	Percent Recovery Of MSD: {(MSD-R1) / SP} x 100
RPD	Relative Percent Difference: {(MS-MSD) / (MS+MSD)} x 100 x 2

QC DATA REPORT

Analysis : PCB 'S (EPA 8080)

Date of Analysis :04/01/99
Laboratory Sample No :OCA 100
Laboratory Reference No : IES 10821

Analyte	R1 (ppb)	SP (ppb)	MS (ppb)	MSD (ppb)	PR1 %	PR2 %	RPD %
PCB-1260	0.0	20	14	13	70	65	7

Definition of Terms :

R1	Results Of First Analysis
SP	Spike Concentration Added to Sample
MS	Matrix Spike Results
MSD	Matrix Spike Duplicate Results
PR1	Percent Recovery Of MS: {(MS-R1) / SP} x100
PR2	Percent Recovery Of MSD: {(MSD-R1) / SP} x 100
RPD	Relative Percent Difference: {(MS-MSD) / (MS+MSD)} x 100 x 2

QC DATA REPORT

Analysis : Metals

Date of Analysis : 04/01/99
Laboratory Sample No : 99030252, OCA200
Laboratory Reference No : IES 10821

Analyte	R1 (ppm)	SP (ppm)	MS (ppm)	MSD (ppm)	PR1 %	PR2 %	RPD %
Antimony	0.00	10.0	9.48	9.60	95	96	1
Arsenic	0.08	10.0	9.90	9.93	98	99	0
Barium	3.67	5.00	8.44	8.39	95	94	1
Beryllium	0.01	1.00	1.07	1.06	106	105	1
Cadmium	0.00	1.00	1.04	1.04	104	104	0
Chromium (Total)	0.44	1.00	1.42	1.41	98	97	1
Chromium (VI)	0.0	5.0	4.6	4.3	92	86	7
Cobalt	0.19	1.00	1.16	1.16	97	97	0
Copper	0.47	1.00	1.54	1.55	107	108	1
Lead	0.11	5.00	4.64	4.65	91	91	0
Mercury	0.00	1.00	0.96	0.99	96	99	3
Molybdenum	0.00	5.00	4.95	4.96	99	99	0
Nickel	0.43	5.00	5.46	5.45	101	100	0
Selenium	0.00	10.0	9.88	9.95	99	100	1
Silver	0.00	5.00	5.21	5.21	104	104	0
Thallium	0.00	10.0	8.91	10.1	89	101	13
Vanadium	0.86	5.00	5.78	5.77	98	98	0
Zinc	0.99	1.00	1.94	1.93	95	94	1

Definition of Terms :

R1	Results Of First Analysis
SP	Spike Concentration Added to Sample
MS	Matrix Spike Results
MSD	Matrix Spike Duplicate Results
PR1	Percent Recovery Of MS: {(MS-R1) / SP} x100
PR2	Percent Recovery Of MSD: {(MSD-R1) / SP} x 100
RPD	Relative Percent Difference: {(MS-MSD) / (MS+MSD)} x 100 x 2

QC DATA REPORT

Analysis : Metals

Date of Analysis : 03/31-04/01/99
Laboratory Sample No : 99030236, 99030229, 99030250
Laboratory Reference No : IES 10821

Analyte	R1 (ppm)	SP (ppm)	MS (ppm)	MSD (ppm)	PR1 %	PR2 %	RPD %
Antimony	0.00	0.10	0.103	0.105	103	105	2
Arsenic	0.00	0.10	0.107	0.104	107	104	3
Barium	0.03	0.100	0.129	0.128	99	98	1
Beryllium	0.00	0.100	0.104	0.103	104	103	1
Cadmium	0.00	0.100	0.096	0.095	96	95	1
Chromium (Total)	0.00	0.100	0.103	0.101	103	101	2
Chromium (VI)	0.00	0.50	0.50	0.50	100	100	0
Cobalt	0.00	0.100	0.094	0.093	94	93	1
Copper	0.000	0.100	0.105	0.104	105	104	1
Lead	0.00	0.10	0.096	0.092	96	92	4
Mercury	0.000	0.010	0.010	0.010	98	99	1
Molybdenum	0.00	0.10	0.114	0.114	114	114	0
Nickel	0.00	0.100	0.093	0.092	93	92	1
Selenium	0.00	0.10	0.108	0.105	108	105	3
Silver	0.00	0.100	0.099	0.098	99	98	1
Thallium	0.00	0.10	0.102	0.103	102	103	1
Vanadium	0.00	0.100	0.107	0.106	107	106	1
Zinc	0.00	0.100	0.098	0.097	98	97	1

Definition of Terms :

R1	Results Of First Analysis
SP	Spike Concentration Added to Sample
MS	Matrix Spike Results
MSD	Matrix Spike Duplicate Results
PR1	Percent Recovery Of MS: {(MS-R1) / SP} x100
PR2	Percent Recovery Of MSD: {(MSD-R1) / SP} x 100
RPD	Relative Percent Difference: {(MS-MSD) / (MS+MSD)} x 100 x 2

Analysis Request and Chain of Custody Record

ORANGE COAST ANALYTICAL, INC.

3002 Dow, Suite 532
Tustin, CA 92780
(714) 832-0064, Fax (714) 832-0067

4620 E. Elwood, Suite 4
Phoenix, AZ 85040
(602) 736-0960 Fax (602) 736-0970

Lab Job No: _____
Page 1 of 3

REQUIRED TAT: 24 HR

CUSTOMER INFORMATION	PROJECT INFORMATION
COMPANY: Harding Lawson Associates	PROJECT NAME: BLDG 4, AOI 4, BRC
SEND REPORT TO: J. Ornelas - IESI	NUMBER:
ADDRESS: 30 Corp Park	LOCATION:
Irvine CA	ADDRESS:
PHONE: FAX:	SAMPLED BY: V. Mathur

SAMPLE ID	NO. OF CONTAINERS	SAMPLE DATE	SAMPLE TIME	SAMPLE MATRIX	CONTAINER TYPE	PRES.	ANALYSIS/METHOD REQUEST: EPA METALS 6010/7156/7471	EDF	EPA 9045	PCB EPA 6080 MOD	REMARKS/PRECAUTIONS
AOI4-B10-1-0.5	1	3-31-99	0800	SOIL	6" 1.5" BRASS	NONE	X	X			Fax results to IESI
AOI4-B10-2-5	↓	↓	0810	↓	↓	↓	X	X			
AOI4-B10-3-10			0822				X	X			
AOI4-B10-4-15D			0828				X	X			
AOI4-B10-4-15			0831				X	X			
AOI4-B1-1-7			0905								HOLD
AOI4-B1-2-11			0912								HOLD
AOI4-B2-1-5.5			0927						X		
AOI4-B2-2-9.5			0933								HOLD
AOI4-B3-1-5.5			1008								HOLD
AOI4-B3-2-9.5			1018								HOLD
AOI4-B4-1-7			1035								HOLD
AOI4-B4-2-11			1040								HOLD
AOI4-B5-1-5.5	↓	↓	1059	↓	↓	↓					HOLD

Total No. of Samples: 14

Method of Shipment:

Relinquished By: V. Mathur	Date/Time: 3/31/99 16:25	Received By:	Date/Time:
Relinquished By:	Date/Time:	Received By:	Date/Time:
Relinquished By:	Date/Time:	Received For Lab By: D. VanKuren	Date/Time: 3-31-99 16:25

Reporting Format: (check)
NORMAL _____ S.D. HMMD _____
RWQCB _____ OTHER _____

Sample Integrity: (check)
intact _____ on ice _____

All samples remain the property of the client who is responsible for disposal. A disposal fee may be imposed if client fails to pickup samples.

BOE-C6-0070492

Analysis Request and Chain of Custody Record

ORANGE COAST ANALYTICAL, INC.

3002 Dow, Suite 532
Tustin, CA 92780
(714) 832-0064, Fax (714) 832-0067

4620 E. Elwood, Suite 4
Phoenix, AZ 85040
(602) 736-0960 Fax (602) 736-0970

Lab Job No: _____
Page 2 of 2

REQUIRED TAT: 24 HR

CUSTOMER INFORMATION		PROJECT INFORMATION	
COMPANY:	HARDING LAWSON	PROJECT NAME:	BLDG 4, AOI 4, BRC
SEND REPORT TO:	J. ORNELAS - IESI	NUMBER:	
ADDRESS:	30 CORP PARK	LOCATION:	
	IRVINE CA	ADDRESS:	
PHONE:	FAX:	SAMPLED BY:	V. MATHUR

SAMPLE ID	NO. OF CONTAINERS	SAMPLE DATE	SAMPLE TIME	SAMPLE MATRIX	CONTAINER TYPE	PRES.	ANALYSIS/METHOD REQUEST: PCB EPA 8080 MOD	EPA METALS 7196 / 7471 EDF RF1	PH EPA 9045	REMARKS/PRECAUTIONS
AOI4-B5-2-9.5	1	3-31-99	1106	SOIL	1.5" BRASS	NONE	X			
AOI4-B6-1-5			1143							HOLD
AOI4-B6-2-9			1148							HOLD
AOI4-B7-1-8.5			1226							HOLD
AOI4-B7-2-12.5			12:33							HOLD
AOI4-B8-1-5.5			1246				X			
AOI4-B8-2-9.5			1253							HOLD
AOI4-B9-1-5			1312							HOLD
AOI4-B9-2-9	↓		1318	↓	↓	↓				HOLD
AOI4-RINSATE-1	3		13:45	WATER	*	1 POLY HNO3	X	X	X	* 2 POLY, 1 AMBER
AOI4-C1/B1,2,3-1-1	1		1008	COMPOSITE SOIL	JAR 4 OZ	NONE	X			
AOI4-C2/B1,2,3-2-5			1018				X			
AOI4-C3/B4,5,6-1-1			1143				X			
AOI4-C4/B4,5,6-2-5	↓	↓	1148	↓	↓	↓	X			

Total No. of Samples: 14

Method of Shipment:

Relinquished By: Vikram Mathur	Date/Time: 3/31/99 16:25	Received By:	Date/Time:
Relinquished By:	Date/Time:	Received By:	Date/Time:
Relinquished By:	Date/Time:	Received For Lab By: on Valcour	Date/Time: 3-31-99 16:25

Reporting Format: (check)
NORMAL _____ S.D. HMMD _____
RWQCB _____ OTHER _____

Sample Integrity: (check)
intact _____ on ice _____

All samples remain the property of the client who is responsible for disposal. A disposal fee may be imposed if client fails to pickup samples.

BOE-C6-0070493

Analysis Request and Chain of Custody Record

ORANGE COAST ANALYTICAL, INC.

3002 Dow, Suite 532
Tustin, CA 92780
(714) 832-0064, Fax (714) 832-0067

4620 E. Elwood, Suite 4
Phoenix, AZ 85040
(602) 736-0960 Fax (602) 736-0970

Lab Job No: _____
Page 3 of 3

REQUIRED TAT: 24 HR

CUSTOMER INFORMATION		PROJECT INFORMATION	
COMPANY:	HARDING LAWSON	PROJECT NAME:	BLOG 4, AOI 4, BRC
SEND REPORT TO:	J. ORNELAS - IFSI	NUMBER:	
ADDRESS:	30 CORP PARK	LOCATION:	
	IRVINE CA	ADDRESS:	
PHONE:	FAX:	SAMPLED BY:	V. MATHUR

SAMPLE ID	NO. OF CONTAINERS	SAMPLE DATE	SAMPLE TIME	SAMPLE MATRIX	CONTAINER TYPE	PRES.	ANALYSIS/METHOD REQUEST: PCB EPA 8080 Mod.	REMARKS/PRECAUTIONS
AOI4-C5/B7,8,9--1-1	1	3-31-99	1312	COMP. SOIL	JAR 4 OZ.	NONE	X	
AOI4-C6/B7,8,9-2-5	↓	↓	1318	↓	↓	↓	X	

Total No. of Samples: 2

Method of Shipment:

Relinquished By: Vikas Mathur	Date/Time: 3-31-99 16:25	Received By:	Date/Time:
Relinquished By:	Date/Time:	Received By:	Date/Time:
Relinquished By:	Date/Time:	Received For Lab By:	Date/Time: 3-31-99 16:25

Reporting Format: (check)
NORMAL _____ S.D. HMMD _____
RWQCB _____ OTHER _____

Sample Integrity: (check)
intact _____ on ice _____

All samples remain the property of the client who is responsible for disposal. A disposal fee may be imposed if client fails to pickup samples.

BOE-C6-0070494